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VERSION HISTORY			
Version	Description of Change	Author	Effective Date
Basic	Initial Release	John Griggs IT/204	05/01/1998
A – L	Revision information older than 7-year retention period relocated to Revision History Overflow Document	Various	07/23/1998 – 02/23/2005
M	Add corrective action plan to Section 6.4	Stephanie Ferguson	09/26/2005
N	Deleted definitions that were previously defined in the QM. Section 8 – Updated the Records table to reflect NPR 1441, NASA Records Retention Schedules	Stephanie Ferguson	01/10/2006
O	Deleted metric from Section 7.0	Stephanie Ferguson	09/11/2006
P	Update process flow diagrams to align with Facility Management paradigm	Stephanie Ferguson	08/06/2007
Q	Deleted unnecessary definitions and removed the words administrative from section 3.5 and observation from section 4.1	Stephanie Ferguson	01/09/2008
R	Remove references to PMR	Stephanie Ferguson	05/05/2008
S	Removed the procedure requirement for lower-tier AI systems.	Stephanie Ferguson	09/17/2008
T	Changed “IV&V Facility” to “IV&V Program”	Stephanie Ferguson	12/17/2008

VERSION HISTORY			
Version	Description of Change	Author	Effective Date
U	Updated definitions of major/minor nonconformances and observations	Stephanie Ferguson	01/25/2010
V	Updated definition of major nonconformances	Stephanie Ferguson	04/07/2010
W	Added reference document precedence statement	Sara Cain	07/29/2010
X	Updated to clarify lower tier action items, define customer and clarify Action Items Tab in Trackwise	Robyn Budd	09/15/2010
Y	Replace Trackwise use with the new ECM workflow for CAR/PAR tracking	Richard Grigg	03/16/2011
Z	Clarify Purpose, Definitions, roles, and Process Flows. Remove Lower Tier Action Item Tracking Systems	Natalie Alvaro	10/21/2011
AA	Incorporate “opportunity for improvement”. Made observation its own entity as it is not necessarily a type of nonconformance.	Natalie Alvaro	05/17/2012
AB	Incorporate Follow Up Review for CAR/PARs in Section 4.1.3	Natalie Alvaro	07/31/2012

REFERENCE DOCUMENTS	
Document	Title
Form 1005	Finding Report
IVV QM	NASA IV&V Quality Manual
IVV 16	Control of Records
NPR 1441.1	NASA Records Retention Schedules

If any process in this document conflicts with any document in NODIS, this document shall be superseded by the NODIS document. Any reference document external to NODIS shall be monitored by the Process Owner for current versioning.

1.0 Purpose

The purpose of this system level procedure (SLP) is to define the corrective and preventive action processes for the NASA IV&V Program. The processes outlined in this procedure govern the identification and resolution of existing or potential nonconformities (including customer complaints), and opportunities for improvement.

2.0 Scope

This SLP applies to all nonconforming or potentially nonconforming processes or procedures associated with the IMS products, and services; and opportunities for improvement pursuant to the NASA IV&V Management System (IMS).

3.0 Definitions and Acronyms

Official NASA IV&V roles and terms are defined in the Quality Manual. Specialized definitions identified in this SLP are defined below.

3.1 Corrective Action Plan (CAP)

A Corrective Action Plan is a plan constructed to describe the course of action to be taken to resolve a CAR in the CAR/PAR System. A CAP is required of CARs expected to take more than 30 calendar days to resolve.

3.2 Corrective Action Request (CAR)

A CAR is the documentation of a nonconformance, and the root cause and action taken to correct that nonconformance. CARs can result from multiple activities or come from multiple sources (e.g., internal or external audits, actions from Program Management's review of the IMS, or customer feedback).

3.3 Delegate

The Delegate is the person assigned action by the Process Owner for a corrective action request (CAR) or preventive action request (PAR).

3.4 Initiator

The Initiator is any NASA IV&V civil service or contract employee who originates a CAR/PAR for change or improvement in the IMS.

3.5 Nonconformance

A nonconformance represents a lack of compliance with a specified process or procedure (requirement) associated with the IMS or a nonconforming product in the IMS. For the purposes of this SLP, nonconformances are categorized into two levels of severity.

3.5.1 Major Nonconformance

A major nonconformance is characterized by one or more of the following:

- A lack of a documented procedure, or a documented procedure that is not being implemented consistently
- An issued nonconforming product that has a significant effect on customer success, safety, or resources
- A series of minor nonconformances that indicates an overall IMS deficiency that may have an adverse effect on overall product quality or customer satisfaction.

3.5.2 Minor Nonconformance

A minor nonconformance is an issued nonconformance that has little or no effect on the customer.

3.6 Observation

An observation is used to capture data points where a potential nonconformance, or an opportunity for improvement exists (i.e., improved effectiveness or efficiency). Observations may include suggested editorial corrections to procedures.

3.7 Preventive Action Request (PAR)

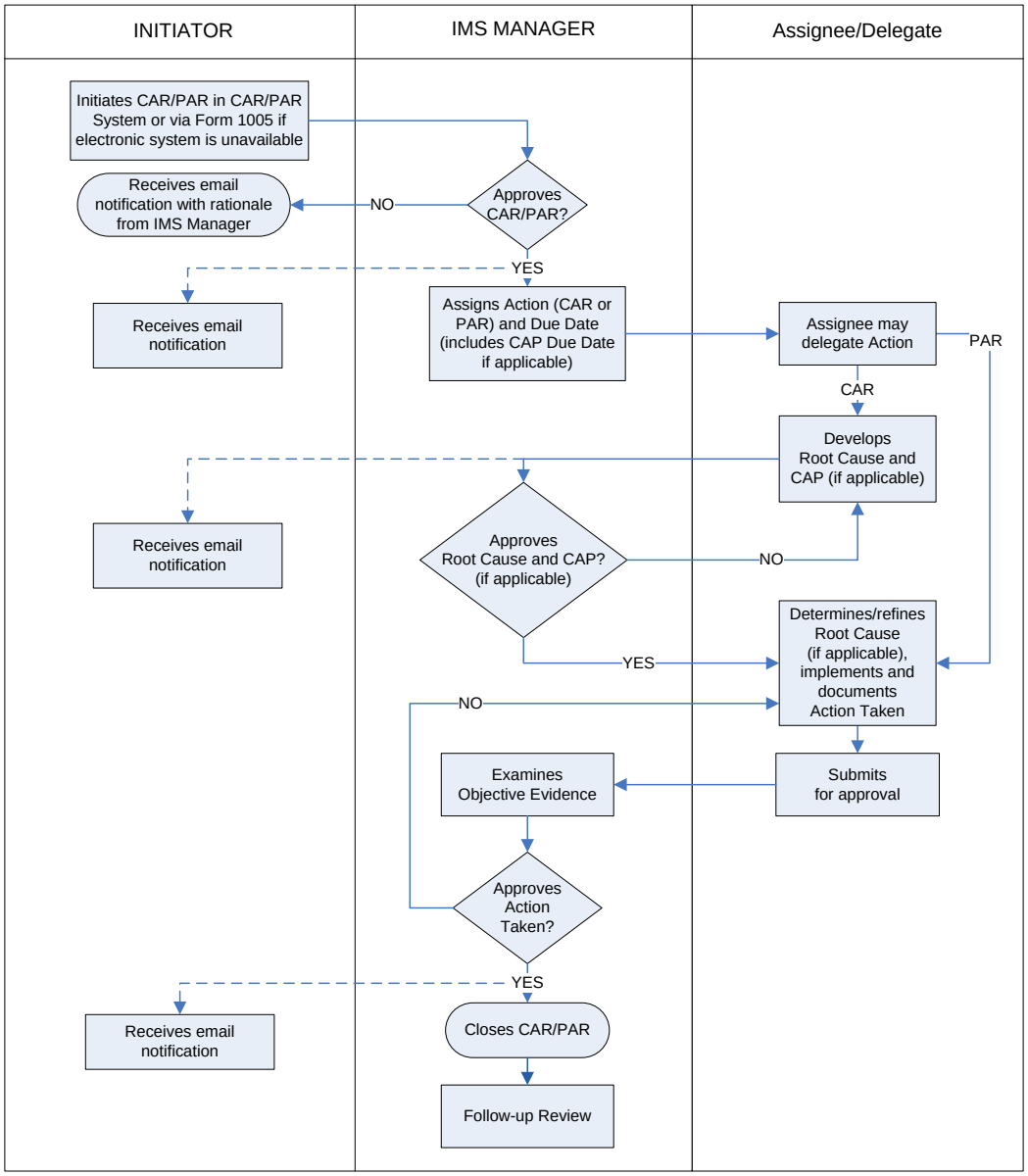
A PAR is the documentation of a potential nonconformance or opportunity for improvement. A PAR may be initiated to remove the causes of a potential nonconformance, or to improve the effectiveness and efficiency of processes, PARs can result from multiple activities or come from multiple sources (e.g., internal or external audits, actions from Program Management's review of the IMS, or customer feedback).

3.8 Acronyms

CAP	Corrective Action Plan
CAR	Corrective Action Request
ECM	Enterprise Content Management
IMS	NASA IV&V Management System
NPR	NASA Procedural Requirement
PAR	Preventive Action Request
PO	Process Owner
QM	Quality Manual
SLP	System Level Procedure

4.0 Process Flow Diagram

The following diagram depicts the process described in this document, and the responsibilities and actions that shall be performed by process participants. Any information supplemental to the depicted process will appear after the diagram.



4.1 Procedure

Corrective and Preventive actions may be identified as a result of internal or external audits, customer complaints, Quarterly Management Reviews (QMR), or through identification of IMS related nonconformances and observations in day-to-day operations.

4.1.1 Initiation

The Initiator shall complete the below listed fields in the ECM *Corrective/Preventive Action Request Form* workflow located at: ECM…/Enterprise Workspace/WORKFLOWS/CAR/PAR

1. CAR/PAR Title
2. Select IMS Procedure/Document affected
3. Select either CAR or PAR (proposed)
4. ISO Finding – for all CARs
5. ISO Potential Problem – for all potential nonconformance PARs

Optional fields:

6. Select Major, Minor, or Observation (OBS)
7. ISO Element
8. Suggested Action

The IMS Manager will approve action, and determine assignee, CAR or PAR assignment and due dates for CAP (if applicable), and closure of action.

The Assignee may delegate the action. The Assignee/Delegate will communicate with the Initiator throughout the process of CAR/PAR resolution to ensure that the action being taken is sufficient in addressing the documented CAR/PAR issue.

4.1.2 Evaluation

4.1.2.1 CARs

The Assignee/Delegate will evaluate the nonconformance to determine the root cause. To determine the root cause, the Assignee/Delegate may consider the following questions:

- What are the potential causes of the nonconformance
- What sequence of events and conditions are causal factors that led to the nonconformance
- Why do the identified causal factors exist

The Assignee/Delegate shall document in the CAR/PAR system the root cause of the nonconformance and a Corrective Action Plan (CAP), if applicable, to correct nonconformance and minimize risk of reoccurrence. The IMS Manager will approve the root cause and CAP.

- **Minor Nonconformance**

  A CAR with a minor nonconformance expected to take more than 30 calendar days to resolve requires an approved Corrective Action Plan to be submitted within 30 days of assignment.

- **Major Nonconformance**

  A CAR with a major nonconformance requires a completed corrective action or an approved Corrective Action Plan within 14 calendar days of assignment.

4.1.2.2 PARs

The Assignee/Delegate will evaluate the potential nonconformance or opportunity for improvement. The nature of a Preventive Action is such that a root cause cannot always be given, but a root cause is recommended to be developed if possible and documented in the CAR/PAR system.

4.1.3 Implementation

The Assignee/Delegate shall implement and document action taken to resolve CARs and PARs in the CAR/PAR System. The IMS Manager will review objective evidence and approve or disapprove the action taken.

In the event that the electronic CAR/PAR System is unavailable, Form 1005, *Finding Report*, may be used as an alternative collection method. When the CAR/PAR System resumes availability, the IMS Manager will enter this information into the CAR/PAR System and discard the completed Finding Report.

The IMS Manager will collaborate with the IMS Representative in review of CAR/PAR status. The IMS Manager shall ensure a follow-up review is conducted of CAR/PARs to validate the effectiveness of the corrective actions taken, or preventive actions of potential nonconformities.

5.0 Metrics

Any metrics associated with this SLP are established and tracked within the NASA IV&V Metrics Program.

6.0 Records

The following records will be generated or updated and filed in accordance with this SLP and IVV 16, *Control of Records*, and in reference to NASA Procedural Requirement (NPR) 1441.1, *NASA Records Retention Schedules*.

Record Name	Original	Vital	Responsible Person	Retention Requirement	Location
CAR/PAR	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	CAR/PAR System
CAR/PAR Tracking	Y	N	IMS Manager	Destroy when 7 yrs old (1/26.5A)	ECM System

The current CAR/PAR System is housed in ECM and accessed through various ECM reports located in the folder at:
ECM…/Enterprise Workspace/WORKFLOWS/CAR/PAR

Note: Prior to March 2011 the CAR/PAR System was housed in the TrackWise tool located at http://trackwise.ivv.nasa.gov.